

REMARKS/ARGUMENTS

Status of the Claims

Upon entry of the present response, claims 27-35 and 37-38 are pending. Claims 27-35 are withdrawn as directed to a non-elected invention. Claims 37-38 are under examination. Claim 37 is amended to set forth that the murine Fuc-TVII is isolated. Support is found, for example, on page 45, line 7 through page 47, line 4; and on page 64, line 15 through page 65, line 5.

No new matter is added by the present amendments, and the Examiner is respectfully requested to enter them.

Telephonic Interview

The Examiner and his supervisor are thanked for graciously granting the telephonic interview of December 18, 2007. The issues discussed are as set forth in the present Office Action and in the Interview Summary.

Request for Rejoinder

Pursuant to M.P.E.P. § 821.04, Applicants respectfully request rejoinder of method claims 27-35. In accordance with M.P.E.P. § 821.04, Applicants amended claim 27 in a previously submitted response to correspond to the scope of claim 37.

Rejection under 35 U.S.C. § 101

The Examiner has rejected claims 37 and 38 under 35 U.S.C. § 101, as allegedly directed to non-statutory subject matter. Applicants do not agree with the Examiner's position. However, in the interest of furthering prosecution, Applicants have amended claim 37 to set forth an isolated enzyme. It is Applicants' understanding from the interview and the Interview Summary that the present amendment is sufficient to overcome the present rejection. Accordingly, the Examiner is respectfully requested to withdraw this rejection.

Rejection under 35 U.S.C. § 102(b)

The Examiner has rejected claims 37 and 38 under 35 U.S.C. § 102(b), as allegedly inherently anticipated by U.S. Patent No. 5,858,752 (“Seed”). Applicants do not agree with the Examiner’s position. However, in the interest of furthering prosecution, Applicants have amended claim 37 to set forth an isolated enzyme. It is Applicants’ understanding from the interview and the Interview Summary that the present amendment is sufficient to overcome the present rejection. Furthermore, for the reasons discussed below, Seed is not prior art to the present invention. Accordingly, the Examiner is respectfully requested to withdraw this rejection.

Rejection under 35 U.S.C. § 103(a)

The Examiner has maintained the rejection of claims 37 and 38 under 35 U.S.C. § 103(a) as allegedly rendered obvious over U.S. Patent No. 5,858,752 (“Seed”) in view of Sasaki, *et al.*, *J Biol Chem* (1994)269:14730-14737 (“Sasaki”). This rejection is respectfully traversed because Seed is not prior art, and Sasaki does not disclose or suggest any murine Fuc-TVII enzyme.

The Examiner has requested that the Declaration be signed by all three inventors. *See*, page 2 of the present Office Action. In response, Applicants provide with this response a Declaration under 37 C.F.R. § 1.131 signed by all three co-inventors John B. Lowe, Kevin M. Gersten and Shunji Natsuka.

The Examiner has requested evidence that the inventors processed (*i.e.*, expressed) the gene encoding the mouse fucosyltransferase VII (“Fuc-TVII”) enzyme before the June 7, 1995 filing date of Seed. *See*, page 2, of the present Office Action. In response, Applicants provide Exhibits G, H and I with the accompanying Rule 131 Declaration. Exhibit G provides evidence that nucleic acid sequences encoding mouse Fuc-TVII were transfected into COS-7 cells for expression. The nucleic acid sequences encoding mouse Fuc-TVII include exon 4, and therefore the sequence encoding the stem and catalytic domains amplified by the primers having nucleic acid sequences of SEQ ID NO:3 and SEQ ID NO:4. Expression and enzymatic activity of the nucleic acid sequences encoding mouse Fuc-TVII are demonstrated in

Exhibits H and I. Exhibit H shows flow cytometry analyses of the transfected COS-7 cells, detecting α -1,3-fucosylated glycan epitopes including sialyl Lewis X, which was produced by the recombinantly expressed mouse Fuc-TVII enzymes. Exhibit I demonstrates enzymatic activity of the recombinantly expressed mouse Fuc-TVII enzymes in cell membrane extracts from the transfected COS-7 cells.

Accordingly, the accompanying Rule 131 Declaration signed by all three co-inventors demonstrates the conception and reduction to practice of the claimed invention before the June 7, 1995 filing date of Seed. As the inventors attest, and the evidence of Exhibits A and B demonstrates, Applicants were in possession of the primers set forth in the claims used to amplify a catalytic domain of a mouse Fuc-TVII, and had used the primers to clone mouse Fuc-TVII stem and catalytic domains from phage 104. As shown in the response submitted on October 29, 2007, Exhibits C-F accompanying the present Declaration confirm that phage 104 contained a gene encoding mouse Fuc-TVII. Exhibit E provides the full-length nucleic acid sequence of the mouse Fuc-TVII gene, as sequenced from phage 104, annotated with the sequence identification numbers of the primers provided in Exhibits C and D used to sequence phage 104. Exhibit F confirms that the inventors correlated mouse Fuc-TVII with phage 104. Finally, as discussed above, Exhibits G-I demonstrate that Applicants expressed recombinant variants of the mouse Fuc-TVII gene, all of which included exon 4 which encodes the catalytic domain amplified by the primers set forth in the claims. Exhibit G confirms transfection of COS-7 cells with expression vectors containing genes encoding variants of the mouse Fuc-TVII, each including exon 4. Exhibit H confirms expression and catalytic activity of the mouse Fuc-TVII enzymes in intact cells. Exhibit I confirms expression and catalytic activity of the mouse Fuc-TVII enzymes in isolated cell membrane fragments.

In view of the evidence provided of by the accompanying Rule 131 Declaration signed by all three co-inventors and Exhibits A-I, conception and reduction to practice of the present invention is confirmed before June 7, 1995. Therefore, it is clear that Seed is not prior art. The Examiner is respectfully requested to withdraw this rejection.

Appl. No. 10/700,505
Amdt. dated April 30, 2008
Reply to Office Action of November 26, 2007

PATENT

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,



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